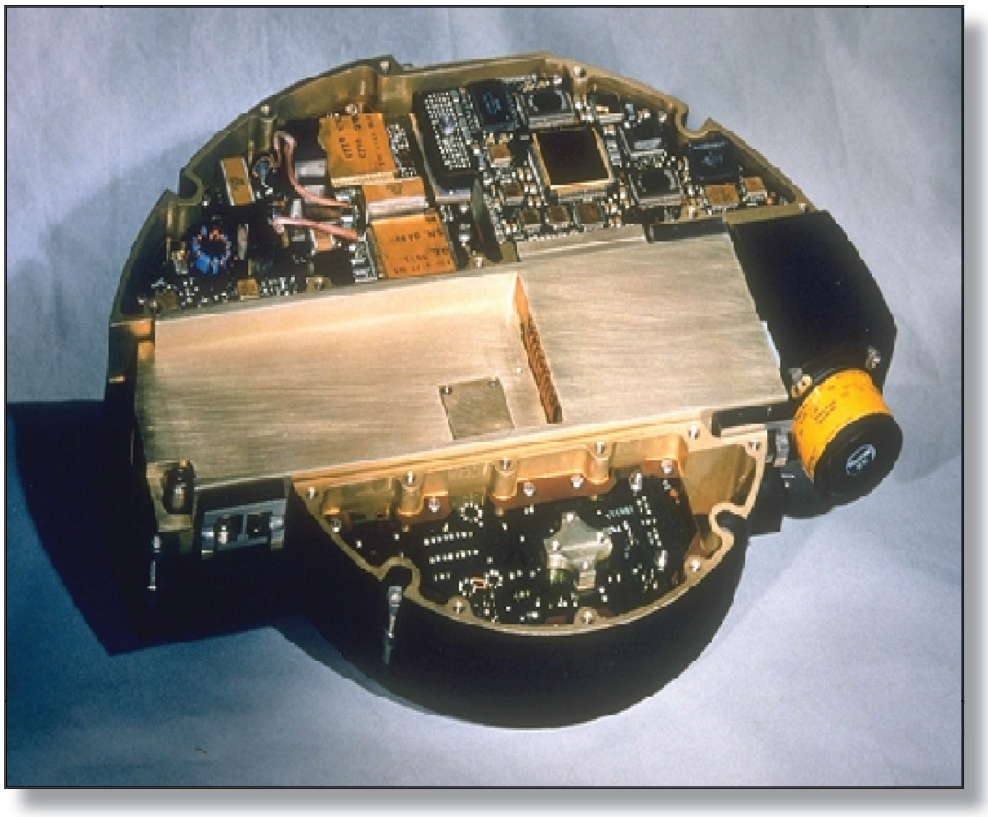
Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

VIPER™ MID-IR LASER AIRCRAFT DEFENSE SYSTEM RETURNS HUGE SAVINGS ON INVESTMENT



Northrop Grumman, under contract with the Materials and Manufacturing Directorate's Manufacturing Technology (ManTech) Division successfully developed significant cost-saving procedures in the manufacture and assembly of the Viper Mid-Infrared (IR) Laser. The directorate estimates a net savings of $4.2 million for the first 250 units, as well as a dramatic increase in yield and reliability improvements in life-cycle costs and increased system availability, without degrading the performance of the Viper.

Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

The Viper Mid-IR Laser is one of the primary components in the Large Aircraft IR Countermeasures (LAIRCM) system, designed to protect C-17s, C-130s, and other large aircraft from IR-guided surface-to-air missiles. The LAIRCM will autonomously detect and signal the flight crew when the aircraft is threatened. It will track and then jam the missile's guidance system, saving both aircrew and aircraft.

ManTech and Northrop Grumman representatives reduced costs for the Viper by addressing manufacturability, maintainability, reliability, supportability, and availability issues. These cost reductions would, in turn, save money on the LAIRCM program.

Background

One example of the steps taken by ManTech and Northrop Grumman representatives to accomplish cost reductions was the insertion of Lean Practices and Principles to increase yield, reduce rework, and touch labor costs. In general, they made design and manufacturing process changes that reduced deficiencies and the number of assembly and adjustment steps for the electronic and optical components.

Another example was the high-value electronics, optics, and other materials that were only available from a single supplier. ManTech obtained multiple supplier sources, creating more competition and driving the cost down by substituting standardized components for specialized ones.

Materials and Manufacturing
Emerging Technologies

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-ML-10)